(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization

International Bureau





(43) International Publication Date 16 December 2004 (16.12.2004)

PCT

(10) International Publication Number WO 2004/108625 A1

(51) International Patent Classification7:

C04B 11/00

(21) International Application Number:

PCT/US2004/017627

(22) International Filing Date:

3 June 2004 (03.06.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 60/475,924

5 June 2003 (05.06.2003) US

- (71) Applicant (for all designated States except US): BOR-DEN CHEMICAL, INC. [US/US]; 180 East Broad Street, Columbus, OH 43215 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): WANTLING, Steven, Joseph [US/US]; 116 Paradise Point Drive, Brandon, MS 39047 (US). ZEPKA, Bonnie, Sherrard [US/US]; 502 Lymington Court, Louisville, KY 40243 (US). DONLON, Thomas, Michael [US/US]; 9808 Winged Foot Drive, Louisville, KY 40223 (US).
- (74) Agent: VAN WYCK, Kenneth, P.; Cantor Colburn LLP, 55 Griffin Road South, Bloomfield, CT 06002 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

- of inventorship (Rule 4.17(iv)) for US only

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: GYPSUM PRODUCTS AND METHOD FOR THEIR MANUFACTURE

(57) Abstract: A method is provided which uses an improved emulsion to imparting water-resistance to gypsum products. In one embodiment, gypsum products comprise calcium sulfate dihydrate and an emulsion which comprises a saponified wax, a nonsaponifiable wax, an alkyl phenol, a surfactant/dispersant salt of polynaphthalenesulfonic acid, and carboxymethylcellulose. Optionally, the emulsions may contain a preservative, e.g., a biocide (mildewcide, fungicide, etc.). These gypsum products resist the uptake of water and therefore resist biological infestation without addition of a preservative.